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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,091	02/23/2004	Bernard Murphy	Q74354	3518

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WASHINGTON, DC 20037

EXAMINER

TO, TUYEN P

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/783,091	<b>Applicant(s)</b> MURPHY ET AL.	
	<b>Examiner</b> Tuyen To	<b>Art Unit</b> 2825	77

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 33-38, 40-43, 66-71 and 73-76 is/are rejected.
- 7) ☒ Claim(s) 6, 11-32, 39, 44-65, and 72 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This is a response to the communication filed on 02/23/2004. Claims 1-76 are pending.

#### ***Specification***

1. The disclosure is objected to because of the following informalities: on page 12, line 5, the word "modes" appears to be a typographical error. It should be replaced with "nodes".

Appropriate correction is required.

#### ***Claim Objections***

2. Claims 7, 40, and 73 are objected to because of the following informalities: the recited "more likely " is not a definite claim language. Also the recited " a successful comparison" needs to be clarified. Appropriate correction is required.

3. Claims 27, 43, 53 are objected to because of the following informalities:

Claim 27 should not depend from claim 35. Examiner has assumed it depend from claim 22.

Claim 43 should not depend from claim 43. Examiner has assumed it depend from claim 42.

Claim 53 should not depend from claim 54. Examiner has assumed it depend from claim 52.

#### ***Drawings***

The drawings are objected to because Figures 1 and 6 do not comply with 37 CFR 1.84 (l) and 37 CFR 1.84(p)(3) (see the attached Form PTO-948). Corrected

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drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-5, 7-10, 33-38, 40-43, and 66-71 and 73-76** are rejected under 35 U.S.C. 102(e) as being anticipated by **Knapp (US Patent No. 6,470,486)**

**Claim 1 and similarly recited claims 34 and 67**, Knapp discloses a method, a computer program product (claim 34), and a system (claim 67) respectively, for recognizing a pattern in a design of an integrated circuit (IC), comprising:

a) identifying a pattern correspondence element in a pattern instance ( Figs. 1 and 5 col. 3, ll. 34-41, col. 5, ll. 61 to col. 6, ll. 4, Knapp teaches solving a general graph-matching problem by finding one-to-one mapping from one element of the pattern graph to the elements of the target graph);

b) building a pattern tree corresponding to the pattern instance ( Figs. 3-5; col. 3, ll. 65 to col. 6, ll. 8; col. 5, ll. 61 to col. 6, ll. 4);

c) defining a list of candidate design correspondence elements in a design instance of the IC ( Fig. 4, col. 4, ll. 26-42, networks of simple gates); and

d) iteratively, for each design correspondence element in said list of candidate design correspondence elements, comparing each rank in a tree representation of said design instance built around said each design correspondence element with corresponding rank in said pattern tree ( Figs. 3-5; col. 3, ll. 65 to col. 6, ll. 8; col. 5, ll. 61 to col. 6, ll. 4).

**Claim 2 and similarly recited claims 35 and 68**, Knapp discloses the method of claims 1, 34, and 67 from which claims 2, 35, and 68 depend, respectively, wherein the pattern instance is in an RTL description (col. 6, ll. 57-67, HDL).

**Claim 3 and similarly recited claims 36 and 69**, Knapp discloses the method of claims 1, 34, and 67 respectively wherein the design instance is in an RTL description (col. 6, ll. 57-67, HDL).

**Claim 4 and similarly recited claims 37 and 70**, Knapp discloses the method of claims 1, 34, and 67 respectively, wherein the design instance and the pattern instance are created using a same synthesis engine (col. 6, ll. 57-67, synthesis).

**Claim 5 and similarly recited claims 38 and 71**, Knapp discloses the method of claims 1, 34, and 67 respectively, wherein the comparing is done only using a topological comparison of the design instance and the pattern instance (Figs 1; col. 3, ll. 34-41; Figs. 3-4; col. 3, ll. 65 to col. 6, ll. 8).

**Claim 7 and similarly recited claims 40 and 73**, Knapp discloses the method of claims 1, 34, and 67 respectively wherein design correspondence elements that are more likely to provide a successful comparison are chosen for comparison at a higher priority ( col. 3, ll. 65 to col. 6, ll. 4).

**Claim 8 and similarly recited claims 41 and 74**, Knapp discloses the method of claims 1, 34, and 67 respectively, wherein said pattern correspondence element is an instance chosen as a starting point for matching between said given pattern instance and said design instance ( col. 5, ll. 24-45; elements p and u).

**Claim 9 and similarly recited claims 42 and 75**, Knapp discloses the method of claims 1, 34, and 67 respectively, wherein said pattern tree comprises successive lists of fanin terminals, fanout terminals and ports (col. 4, ll. 64 to col. 5, ll. 60).

**Claim 10 and similarly recited claims 43 and 76**, Knapp discloses the method of claims 9, 42, and 75, respectively, wherein the root of said pattern tree is the pattern correspondence element (col. 4, ll. 42 to col. 5 ll. 60).

**Claim 33 and similarly recited claim 66**, Knapp discloses the method of claims 1 and 34 respectively, wherein one of a computer aided design (CAD) system, a CAD program and a clock synchronization analysis tool is used to implement the process (col. 1, ll. 16-30, an automatic design automation (EDA) system).

#### **Allowable Subject Matter**

6. **Claims 6, 11-32, 39, 44-65, and 72** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **Claim 6, 11-32, 39, 44-65, and 72 would** be allowable because the prior art of record does not teach or fairly suggest the limitations of **claims 6, 11, 22, 39, 44, 55, and 72**.

#### **Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen To whose telephone number is (571) 272-8319. The examiner can normally be reached on 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

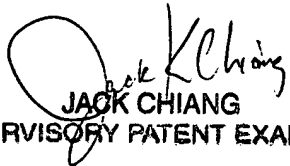
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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuyen To

Patent examiner



JACK CHIANG  
SUPERVISORY PATENT EXAMINER